

REMARKS

Foreign Priority

The acknowledgement, in the Office Action, of a claim for foreign priority under 35 U.S.C. § 119(a)-(d), and that the certified copies of the priority documents have been received, is noted with appreciation.

Status Of Application

Claims 1-41 are pending in the application. The status of the claims is as follows:

Claims 1-9 are withdrawn from further consideration;

Claims 35 and 39 are objected to because of informalities;

Claims 22-24 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention;

Claims 33, 34 and 36-38 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,351,087 to Christopher et al. (hereinafter the "Christopher patent");

Claim 35 is rejected under 35 U.S.C. § 103(a) as being unpatentable over the Christopher patent, in view of U.S. Patent No. 6,226,414 to Go (hereinafter the "Go patent");

Claims 10, 11, 15 and 39-41 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,534,919 to Nobuoka (hereinafter the "Nobuoka patent"), in view of U.S. Patent No. 6,025,929 to Nakajima et al. (hereinafter the "Nakajima patent");

Claims 12-14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the Nobuoka patent, in view of the Nakajima patent and further in view of U.S. Patent No. 5,990,949 to Haruki (hereinafter the "Haruki patent"); and

Claims 16-21 and 25-32 are allowed.

Drawings

The indication, in the Office Action, that the drawings filed on June 19, 1998 are accepted, is noted with appreciation.

Claim Amendments

Claims 10, 22, 27, and 39 have been amended to improve the form of each respective claim. These changes are not necessitated by the prior art, are unrelated to the patentability of the invention over the prior art, and do not introduce any new matter.

Allowable Subject Matter

The indication, by the Examiner that claims 16-21 and 25-32 are allowed, is noted with appreciation.

35 U.S.C. § 112 Rejection

The rejection of claims 22-24 under the second paragraph of 35 U.S.C. § 112, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention, is respectfully traversed based on the following.

Claims 23 and 24 depend from claim 22. As indicated in the Office Action the limitation "the compression rate" in claims 22-24 lacks antecedent basis. In response, "the compression rate" in claim 22 has been changed to "a compression rate", thus eliminating the inconsistencies in claims 22-24.

Accordingly, it is respectfully requested that the rejection of claims 22-24 under the second paragraph of 35 U.S.C. § 112, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention, be reconsidered and withdrawn.

35 U.S.C. § 102(b) Rejection

The rejection of claims 33, 34 and 36-38 under 35 U.S.C. § 102(b), as being anticipated by the Christopher patent, is respectfully traversed based on the following.

Claims 33, 34 and 36

The requirements for claim 33 include an interpolation portion for executing pixel interpolation based on data of colors constituting image data, wherein the interpolating portion has a plurality of interpolators, and a controller for selecting one of a plurality of the interpolators according to a compression rate set by the compression rate setting portion. The Christopher patent fails to disclose or suggest a device having an interpolating portion having a plurality of interpolators, and further, fails to disclose or suggest a controller for selecting one of the plurality of interpolators according to a compression rate set by the compression rate setting portion. Therefore, claim 33 is not anticipated by the Christopher patent.

Claims 34 and 36 depend from claim 33. As the Christopher patent fails to disclose all of the features of claim 33, and thus, does not anticipate claim 33. Dependent claims 34 and 36 are also not anticipated by the Christopher patent.

Claims 37 and 38

The method of claim 37 requires a step for executing an interpolation process, which is selected from a plurality of interpolating processes, on image data of colors constituting image data obtained from an imaging device according to a set compression rate. The Christopher patent does not disclose or suggest a device which operates such that a step of executing an interpolating process are recited in claim 37. Therefore, claim 37 is not anticipated by the Christopher patent.

As claim 38 depends from claim 37, claim 38 is also not anticipated by the Christopher patent.

Accordingly, it is respectfully requested that the rejection of claims 33, 34 and 36-38 under 35 U.S.C. § 102(b), as being anticipated by the Christopher patent, be reconsidered and withdrawn.

35 U.S.C. § 103(a) Rejections

Claim 35

The rejection of claim 35 under 35 U.S.C. § 103(a), as being unpatentable over the Christopher patent, in view of the Go patent, is respectfully traversed based on the following.

Claim 35 depends from claim 33. As stated in the previous arguments for claim 33 over the Christopher patent, the Christopher patent fails to disclose or suggest an interpolation portion having a plurality of interpolators, and further, fails to disclose or suggest a controller for selecting one of the plurality of interpolators according to a compression rate set by the compression rate setting portion. Thus, claim 33 is distinguished and nonobvious over the Christopher patent.

Similarly, the Go patent also fails to disclose or suggest an interpolating portion having a plurality of interpolators, and further, fails to disclose or suggest a controller for selecting one of the plurality of interpolators according to a compression rate set by the compression rate setting portion. Thus, any combination of the Christopher patent and the Go patent would still fail to disclose or suggest an interpolation portion and a controller in accordance with claim 33 because both references fail to disclose or suggest these features. Therefore, claim 33 is distinguished and nonobvious over any of the Christopher patent, the Go patent, or any combination of the two.

Accordingly, it is respectfully requested that the rejection of claim 35 under 35 U.S.C. § 103(a) as being unpatentable over the Christopher patent, in view of the Go patent, be reconsidered and withdrawn.

Claims 10, 11 and 15

The rejection of claims 10, 11, 15 and 39-41 under 35 U.S.C. § 103(a), as being unpatentable over the Nobuoka patent, in view of the Nakajima patent, is respectfully traversed based on the following.

The requirements for the apparatus of claim 10 include a changer for changing an interpolating process by an interpolating portion depending on which one of recording by a recorder and displaying by a display unit is performed.

The Office Action correctly acknowledges that the Nobuoka patent does not disclose a device having a changer as required by claim 10, but instead discloses a device which chooses an interpolation method by determining the difference among adjacent pixel data. However, the Office Action also states that the second reference, the Nakajima patent, discloses a device able to select the type of image quality required for a print job and able to adjust the operation of a print system to accommodate the selection, and thus, the teachings of the Nobuoka patent, the Nakajima patent, and Official Notice taken that it is well known in the art to display images at a lower quality than they are recorded so that processing time for viewing the image on a display is reduced, all combine to render claim 10 obvious.

Regarding the combination of references MPEP 2143 teaches that to establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the references, and the references must teach or suggest all the claim limitations.

Firstly, there is no suggestion in either the Nobuoka patent or the Nakajima patent that would motivate one of ordinary skill in the art to combine the teachings of the Nobuoka patent and the Nakajima patent. In particular, the Nobuoka patent teaches an image pickup device which calculates R, G and B color values from received pixel values. The Nobuoka patent's teaching of calculating pixel values based on the values of

neighboring pixels does not provide any suggestion or motivation that would direct one of ordinary skill in the art to provide a changer for changing an interpolating process depending on which one of recording by a recorder and displaying by a display unit is performed.

On the other hand, the Nakajima patent discloses a printer device which allows a user to select one of a high speed mode and a high quality mode for printing an image. Despite the statement in the Office Action that "[E]ven though the Nakajima system is used in a printer the input data is composed of image data and hence could be used in an image processor too", the Nakajima patent also fails to disclose or a changer as required by claim 10. In particular, the Office Action implies that because the Nakajima patent manipulates image data, a combination of the Nakajima patent with the teachings of the Nobuoka patent is justified. However, the MPEP teaches that in order to combine references, there must be some motivation or suggestion for such combination. Specifically, MPEP 2143.01 states that the three possible sources for a motivation for combining references are the nature of the problem to be solved, the teachings of the references, and the knowledge of persons of ordinary skill in the art. In the present case, none of these sources provide any objective reason for combining the Nobuoka patent and the Nakajima patent, and in fact, the only motivation present is that of hindsight, which specifically prohibited. (MPEP 2142). That is, although each of the references discloses a device which performs processing on image data, the Nobuoka patent's teachings of different methods for calculating pixel values based on the values of neighboring pixels, and the Nakajima patent's teachings of allowing selection of a low speed, high quality print output and a high speed, lower quality print do not suggest or motivate one of ordinary skill in the art to combine one with the other, and in particular, do not suggest combination of one with the other to create a changer as claimed.

Secondly, any combination of the Nobuoka patent and the Nakajima patent fails to disclose or suggest the presently claimed invention. In particular, both references, whether taken singly or in combination fail to disclose, suggest, or teach a device for changing an

interpolating process by an interpolating portion depending on which one of recording by a recorder and displaying by a display unit is performed.

Perhaps recognizing the shortcomings of the combination of the Nobuoka patent and the Nakajima patent, the Office Action states that "Official Notice is taken that it is well known in the art to display images at lower quality than they are recorded so that processing time for viewing the image on a display is reduced." However, this statement, whether taken by itself or in combination with the other cited references does not disclose or suggest the specific requirements of claim 10. In particular, regardless of whether or not it is known in the art to display images at lower quality than they are recorded, this feature does not disclose or suggest that the device would include a changer for changing an interpolating process by an interpolating portion depending on which one of recording by a recorder and displaying by a display unit is performed. It is only with the use of impermissible hindsight that such a conclusion is drawn

Therefore, as the foregoing arguments have shown, none of the cited references, with or without the aid of the Official Notice, disclose or suggest a changer for changing an interpolation process by an interpolation portion depending on which one of recording by the recorder and displaying by the display unit is performed. Thus, claim 10 is distinguished and nonobvious over any of the Nobuoka patent, the Nakajima patent, or any combination of the two.

Each of claims 11 and 15 depend from claim 10. As claim 10 is distinguished and nonobvious over the cited references, dependent claims 11 and 15 are also distinguished and nonobvious over the cited references.

Claims 39-41

Claim 39 requires a method including the steps of capturing image data by means of an imaging device; and executing a varied interpolating process depending on whether the captured image is to be displayed or recorded.

As shown in the previous argument, one of ordinary skill in the art finds no suggestion or motivation to combine the teachings of the Nobuoka patent and the Nakajima patent, and it is only with the application of impermissible hindsight that the teachings of the Nobuoka patent and be combined with the teachings of the Nakajima patent. Moreover, neither reference, whether taken separately or in combination with the other, discloses or suggests a device capable of executing a varied interpolation process depending on whether a captured image is to be displayed or recorded. Thus, claim 39 is distinguished and nonobvious over any of the Nobuoka patent, the Nakajima patent, and any combination of the two references.

Claims 40 and 41 depend from claim 39. Therefore, because claim 39 is distinguished and nonobvious over the combination of the Nobuoka patent and the Nakajima patent, dependent claims 40 and 41 are also distinguished and nonobvious over the combination of the Nobuoka patent and the Nakajima patent.

Accordingly, it is respectfully requested that the rejection of claims 10, 11, 15 and 39-41 under 35 U.S.C. § 103(a) as being unpatentable over the Nobuoka patent, in view of the Nakajima patent, be reconsidered and withdrawn.

Claims 12-14

The rejection of claims 12-14 under 35 U.S.C. § 103(a), as being unpatentable over the Nobuoka patent, in view of the Nakajima patent and further in view of the Haruki patent, is respectfully traversed based on the following.

Claims 12-14 depend from claim 10. As shown in the previous arguments, claim 10 is distinguished and nonobvious over any combination of the Nobuoka patent and the Nakajima patent. In particular, one of ordinary skill in the art finds no reason to combine the Nobuoka patent and the Nakajima patent, and further, the changer required by claim 10 is not suggested or disclosed in either of the Nobuoka patent or the Nakajima patent.

In a similar manner, the Haruki patent also fails to disclose a changer for changing an interpolating process by an interpolating portion depending on which one of recording by a recorder and displaying by a display unit is performed, as required by claim 10. Thus, claim 10 includes a requirement not disclosed or suggested by any of the Nobuoka patent, the Nakajima patent, or the Haruki patent. Therefore, claim 10 is distinguished and nonobvious over any of the Nobuoka patent, the Nakajima patent, the Haruki patent, or any combination thereof.

Accordingly, it is respectfully requested that the rejection of claims 12-14 under 35 U.S.C. § 103(a), as being unpatentable over the Nobuoka patent, in view of the Nakajima patent and further in view of the Haruki patent, be reconsidered and withdrawn.

CONCLUSION

Wherefore, in view of the foregoing amendments and remarks, this application is considered to be in condition for allowance, and an early reconsideration and a Notice of Allowance are earnestly solicited.

This Amendment does not increase the number of independent claims, does not increase the total number of claims, and does not present any multiple dependency claims. Accordingly, no fee based on the number or type of claims is currently due. However, if a fee, other than the issue fee, is due, please charge this fee to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260.


Any fee required by this document other than the issue fee, and not submitted herewith should be charged to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260. Any refund should be credited to the same account.

If an extension of time is required to enable this document to be timely filed and there is no separate Petition for Extension of Time filed herewith, this document is to be construed as also constituting a Petition for Extension of Time Under 37 C.F.R. § 1.136(a) for a period of time sufficient to enable this document to be timely filed.

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Any other fee required for such Petition for Extension of Time and any other fee required by this document pursuant to 37 C.F.R. §§ 1.16 and 1.17, other than the issue fee, and not submitted herewith should be charged to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260. Any refund should be credited to the same account.

Respectfully submitted,

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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

The following is a marked-up version of the changes to the specification and claims which are being made in the attached response to the Office Action dated June 5, 2002.

IN THE SPECIFICATION:

Paragraph [0001] on page 1.

[0001] This application is based on applications Nos. H09-162478, H09-162480, H09-162484, H09-232543, H09-232549 [field] filed in Japan, the contents of which are hereby incorporated by reference.

Paragraph [0065] on page 15.

[0065] As is apparent from Fig. 5, according to this characteristic, the shutter speed is set faster in capturing the preview image than in capturing the recording image in a bright environment, so that the image is reproduced with increased brightness. On the other hand, the shutter speed is set slower in capturing the preview image than in capturing the recording image in a dark environment, so that the image is reproduced with reduced brightness[.].

Paragraph [0093] on page 22.

[0093] The band correcting section 14 adjusts the levels of the R, G and B signals according to gain setting values (α , β) in the amplifying section 66 for high-frequency correction and the amplifying sections 63 and 68 for intermediate-frequency correction, thereby controlling the frequency

characteristic of each signal. For example, when the gain α of the amplifying section 66 is set to a great value, the high-frequency component of each signal is emphasized. When the gain β of the amplifying sections 63 and 68 are set to great values, the intermediate-frequency component of each signal is emphasized.

Paragraph [0095] on page 23.

[0095] The characteristic curve "a" (solid line) is in the case where the gain α in the amplifying section 66 for high-frequency correction is zero and the gain β in the amplifying sections 63 and 68 for intermediate-frequency correction is zero.

Paragraph [0096] on page 23.

[0096] The characteristic curve "b" (dashed line) is in the case where the gain α in the amplifying section 66 for high-frequency correction is 0.3 and the gain β in the amplifying sections 63 and 68 for intermediate-frequency correction is zero. In this case, the high-frequency component of each signal is emphasized.

Paragraph [0100] on page 24.

[0100] Table 2 shows the relations between the capture image size and the image compression rate that the user sets and the high-frequency amplification gain α in the amplifying section 66 for high-frequency correction and the intermediate-frequency amplification gain β in the amplifying sections 63 and 68 selected according to them when the "natural picture mode" is selected.

Table 2 on page 24.

Table 2

Capture image size	Image compression mode	Intermediate-frequency amplification gain [*] β	High-frequency amplification gain [β] α
512 X 384	No compression	1.5	0.1
	1/8 JPEG compression	1.5	0.1
	1/20 JPEG compression	1.5	0
640 X 480	No compression	1.2	0.1
	1/8 JPEG compression	1.2	0.1
	1/20 JPEG compression	1.2	0
1024 X 768	No compression	1	0.3
	1/8 JPEG compression	1	0.3
	1/20 JPEG compression	1	0

Paragraph [0101] on page 24.

[0101] In the electronic still camera 1 of the present embodiment, specified gain setting values (α , β) are selected on the basis of Table 2 according to the capture image size and the image data compression rate set by the user. For example, when the capture image size is set to "512x384 pixels" and the image compression mode is set to "1/8 JPEG compression", then the high-frequency amplification gain β and the intermediate-frequency amplification gain β take the values of [1.5 and 0.1,] 0.1 and 1.5, respectively, so that the intermediate-frequency component of each signal is emphasized.

[0102] As is apparent from Table 2, the intermediate-frequency amplification gain [*] β is set higher as the capture image size becomes

smaller. Consequently, the intermediate-frequency component of each signal is emphasized, so that correction can be achieved with greater importance attached to the contrast while suppressing the noises in the high-frequency component that originally has no information. When the capture image size is large, then the high-frequency amplification gain $[\beta]$ α is set high, and high-frequency emphasis is executed so that reproducibility up to the high-frequency signal is assured.

Paragraph [0103] on page 25.

[0103] Furthermore, the high-frequency amplification gain $[\beta]$ α is set lower as the image data compression rate is higher, and therefore, the high-frequency characteristic is reduced to suppress the generation of high-frequency noises.

Paragraph [0104] on page 25.

[0104] As described above, the band [control] control is executed based on the setting values of the specified amplification gain corresponding to the capture image size and the image data compression rate when the "natural picture mode" is set. By this operation, the reduction in high-frequency region of R and B due to the Bayer array based on G can be corrected, so that a frequency characteristic appropriate for the characteristics of the subject can be obtained while further suppressing the coloring of the edges and hue rotation.

Table 3 on page 26.

Table 3

Image recording mode	Intermediate-frequency amplification gain [α] β	High-frequency amplification gain [β] α
Gray text mode (1024 X 768)	1.5	0
Binary text mode (1024 X 768)	2	0

IN THE CLAIMS:

10. (Once Amended) An apparatus capable of image capturing comprising:
an imaging device which captures image data;
a recorder for recording image data transferred from said imaging device into a specified medium;
a display unit for displaying the image data transferred from said imaging device;
an interpolating portion for executing interpolation of pixels constituting an image;
and
a changer for changing an interpolating process by said interpolating portion [between] depending on which one of recording by the recorder and displaying by the display unit is performed.

22. (Once Amended) An apparatus capable of image capturing as claimed in claim 16, wherein said image-recording mode setting portion sets [the] a compression rate in a recording stage.

27. (Twice Amended) An apparatus capable of image capturing as claimed in claim 26, wherein said controller controls the band correcting portion so as to further [a]suppress a high-frequency component of the frequency components included in the image.

33. (Once Amended) An apparatus capable of image capturing comprising:
an imaging device having a filter array of a plurality of colors;
a compression rate setting portion for setting a compression rate of image data;
an interpolating portion for executing pixel interpolation based on data of colors
constituting said image data, said interpolating portion having a plurality of interpolators;
and

a controller for selecting one of said plurality of interpolators [controlling the
interpolating portion] according to a compression rate set by said compression rate setting
portion.

35. (Once Amended) An apparatus capable of image capturing as claimed in
claim 33, wherein an interpolating process that is executed in said interpolating portion is
selected out from among an interpolating process employing an average filter, an
interpolating process employing a median filter and an interpolating process for executing
simple interpolation with adjacent pixel data.

37. (Twice Amended) An image data processing method for an apparatus
capable of image capturing, comprising the steps of:
setting a compression rate of image data obtained from an imaging device; and
executing an interpolating process, which is selected from a plurality of
interpolating processes, on image data of colors constituting the image data according to
the set compression rate.

39. (Once Amended) An image data processing method for an apparatus
capable of image capturing which can display and record a captured image, comprising the
steps of:
capturing image data by means of an imaging device; and
executing a varied interpolating process depending on whether the captured image
is to be [displaced] displayed or recorded.